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ABSTRACT

Attending to the questions of how school leadership influences learning and achievement and what effective school leaders do, this document describes a measurement-based approach for studying and developing effective school leadership. The document details the conception, refinement, and psychometric properties of the Instructional Leadership Inventory (ILI), a self-report survey designed to assess the direct impact principals have on their schools. Responses regarding principals' efforts to define school mission, manage curriculum, supervise teaching, monitor student progress, and promote instructional climate and those responses regarding general characteristics of staff, school, and community are used in the ILI to uncover characteristics of effective leadership. Also described are the conception, development, reliability, and validity of the student version and teacher version of the Instructional Climate Inventory (ICI), a multiple-choice survey designed to flesh out and cross-check the information obtained via the ILI. Lastly, the document discusses the School Administrator Assessment Survey (SAAS), a modification of Maehr and Braskamp's SPECTRUM, which is designed to measure administrators' job satisfaction, commitment, self-concept, personal incentive, perception of job opportunities, and perception of instructional climate. Included are six tables and one figure. (46 references) (CLA)

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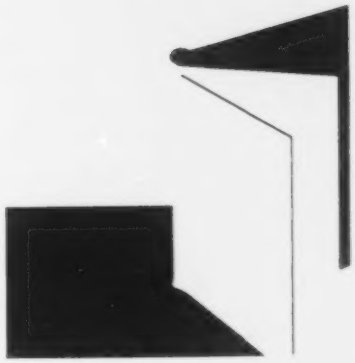

# *Leadership and Learning: A Measurement-Based Approach for Analyzing School Effectiveness and Developing Effective School Leaders*

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# The National Center for School Leadership

# Project Report

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*In collaboration with*

The University of Michigan

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Our objectives are to produce new knowledge about school leadership and influence the practice and preparation of school leaders. Through various research programs and dissemination activities, we aim to give school leaders effective strategies and methods to influence teaching and learning.

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# *Leadership and Learning: A Measurement–Based Approach for Analyzing School Effectiveness and Developing Effective School Leaders*

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Written December 1988
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Our concern about the quality of public education in America probably began when we discovered that Johnny couldn't read. That concern grew when we discovered that he could neither count very well nor locate countries on a world map. And our concern probably peaked when we discovered that there are 27 million adult Americans like Johnny who are unable to read a newspaper or fill out a simple job application.

This situation led the U.S. Department of Education in 1983 to issue a warning regarding the threat posed by the eroding quality of public education in America. Individual state legislatures were quick to respond and passed a series of broad "educational reform" packages. Although educational reform is something that seems to occur about as regularly (and have as much long term impact) as religious revivals, the reform activities of the 1980's were unique in the attention they focused on certain educational roles, in particular that of the school leadership role (Murphy, 1988).

## The Impact of Leadership on Organizational Outcomes

Decades of research in social psychology has repeatedly demonstrated that organizations need effective leaders if they are to be successful (see, for example, Ames, 1985; Fiedler, 1964; Vroom, 1976;, Yukl, 1982). Effective leaders provide the organization with a combination of technical skills and "functional" skills. Technical skills, such as financial analysis, can generally be acquired through advanced training and education. Functional skills, such as communication and decision-making talent, are more often acquired through experience rather than classroom learning. Leaders use these skills to help establish goals for the organization and to direct individual efforts toward the achievement of those goals.

Among remarks prepared for delivery by President John Kennedy at the Dallas Trade Mart we find the statement "leadership and learning are indispensable to each other." Perhaps because he never reached the Trade Mart that November day to deliver those remarks, the importance of leadership for the schools seems largely to have gone ignored for the next two decades. Finally, the reform activities of the 1980's began to focus attention on analyzing and developing leadership in the schools. Although school leadership has been analyzed from many different perspectives, two questions, in particular, have become a focal point for both research activity and professional development in recent years: (a) How does school leadership influence learning and achievement? and (b) What do effective school leaders do?

## How Does School Leadership Influence Learning and Achievement?

Numerous models have been proposed to explain classroom learning and achievement (e.g., Bloom, 1976; Gordon, 1980). One of the most comprehensive is that offered by Blaine and Merrifield (1986, p. 193). In their model, changes (i.e., gains) in achievement are explained in terms of changes in four components: abilities, temperament, motivation, and situation. What makes their model unique is that the impact of each component is in turn moderated by individual differences in the other three components. For example, an increase in motivation is likely to result in an increase in achievement, but that increase may vary for students of different abilities and temperaments and as a function of situational (i.e, instructional) factors. Similarly, changes in instructional strategies will produce changes in achievement, but once again those changes will be mediated by the ability, temperament, and motivation of students. The relationship among these components can be seen graphically as a model in Figure 1. These relationships can be even more precisely conceptualized in an equation. That is,

$$\delta(\text{Achievement}) = \delta A(T * M * S) + \delta T(A * M * S) + \delta M(A * T * S) + \delta S(A * T * M) \quad , \qquad (1)$$

where A, T, M, and S represent ability, temperament, motivation, and situational factors. The delta ($\delta$) terms represent changes in each of these factors.

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Insert Figure 1 about here

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Where does instructional leadership play its role in shaping achievement outcomes in this model?

Obviously, ability and temperament factors must largely be regarded as entry characteristics (Bloom, 1976), that is factors that are largely shaped by influences outside the classroom and outside the control of the public school, except in the case of magnet schools that can be directly or indirectly selective. Motivation, on the other hand, is more dynamic and malleable. Leaders have a very direct and pervasive impact on the motivation level of people within the organization. The vehicle may occasionally be a one-on-one "pep talk." More likely, the leadership impact is felt by establishing and nurturing what has been called the culture or climate of an organization, the system of values, beliefs, and attitudes that characterize and distinguish that organization.

In their studies of organizations, Maehr and Braskamp (1986) have shown that the culture or climate of an

organization is an important mediating variable that can be manipulated by leaders (Schein, 1984; Sergiovanni & Corbally, 1984) and that affects the motivation of people within the organization.

Situational factors, the fourth component of the model, are even more directly under the control of school leaders who can, for example, coordinate curriculum across grade levels to ensure that learning follows logically related sequences or to establish high expectations by defining specific achievement goals.

In short, school leaders enter the achievement equation both directly and indirectly. By exercising certain behaviors that facilitate learning, they directly control situational (S) factors in which learning occurs. By shaping the school's instructional climate, thereby influencing the attitudes of teachers, students, parents, and the community at large toward education, they increase both student and teacher motivation and indirectly impact learning gains.

## The Role of Assessment in Understanding What Effective School Leaders Do

Once we understand that school leaders have both a direct and an indirect impact on student achievement, it seems natural to ask what effective leaders do. At the same time that we ask what they do, we need to ask how it can be measured. The introduction of measurement concepts at this point is necessary for several reasons. First and most importantly, precise measurement is the factor that separates speculation from science and turns hunches into testable hypotheses (Cattell, 1986). Although research on instructional leaders has increased dramatically in recent years, much of it has remained at a purely descriptive level (Blase, 1987) and has failed to provide operational specification for key dimensions or constructs. Without precise specifications it is difficult to articulate even a fairly primitive model that might lead to a better understanding of achievement. Finally, formal analysis of more complex achievement models such as that proposed by Blaine and Merrifield (1986), which are ultimately more likely to prove realistic, makes the psychometric characteristics of variables in the model a critical consideration.

In his review of assessment problems facing the area of instructional leadership, Murphy (1988) outlined three major problems: (a) atheoretic, descriptive approaches that downplay the importance of explanatory models, (b) focusing on too limited a range of easily observable behaviors, and (c) ignoring stylistic or personal factors that help define the set of behaviors effective administrators use. Murphy proceeds

to note that the impact of school leadership can not be fully understood by assessing a narrow range of behaviors in isolation nor by ignoring the context in which they occur. Approaches that stop at the descriptive level may appear rigorously empirical and objective at first glance. However, when they fail to provide a theoretical explanation for the relationship among observations, they are of limited use to those attempting to change behavior and improve school leadership skills.

The remainder of this chapter is devoted to describing a measurement-based approach for studying and developing instructional leadership effectiveness. At the same time it describes a system of interrelated instruments that have been developed in the course of that investigation. These instruments provide: (a) an operationally precise and reliable definition of key dimensions of instructional leadership, (b) a methodology for conducting a multi-level assessment of the instructional climate of a school, and (c) an underlying theory and a set of constructs for explaining instructional leadership behavior.

## Instructional Leadership: Structure and Measurement

The instructional leadership research base identifies numerous practices and characteristics of administrators that are associated with measurable improvements in student achievement (Brandt, 1987). Most of this research has generated descriptions of what principals do (Dwyer, 1985; Martin & Willower, 1981; Metz, 1978). Much less research has been directed toward developing structural models of principal instructional leadership behavior. One of the more ambitious attempts to do so is that of Hallinger (1984; Hallinger & Murphy, 1985) who has developed several versions of the Principal Instructional Management Scale (PIMRS). This instrument consists of 50 items that may be answered by a principal, a teacher, or a superintendent. Each item is answered on a five-point Likert scale with the two end categories anchored by the phrases "Almost Never" and "Almost Always." Scores are reported for 10 areas: Frame the School Goals, Communicate the School Goals, Supervise and Evaluate Instruction, Coordinate the Curriculum, Monitor Student Progress, Protect Instructional Time, Maintain High Visibility, Provide Incentives for Teachers, Promote Professional Development, Provide Incentives for Learning.

Although the development of the PIMRS represented an important advance from description to measurement, there are several problems with its construction. First, many of the items are fairly long and complex. In comparison with short, behaviorally specific statements, such items are more likely to reflect the influence of multiple latent factors, to

produce scales with low internal consistency, and to generate higher correlations among scales. Second, although the instrument has been available for several years, evidence for its reliability or validity is relatively limited and/or difficult to obtain. In addition, no norms have been developed to facilitate comparative applications and little is known about the sensitivity of the instrument to differences arising from such demographic factors as school type (elementary, middle, secondary), school size, gender, or age. Third, although Murphy has argued that the impact of instructional leadership cannot be fully understood by ignoring the context in which it occurs, the PIMRS makes no attempt to assess contextual factors that might moderate or influence the interpretation of individual scores.

For these reasons we began a series of studies aimed at developing a "second-generation," psychometrically more refined measure of instructional leadership. We began by thoroughly reviewing the instructional leadership research base which identifies numerous practices and characteristics of administrators that are associated with measurable improvements in student achievement (Brandt, 1987; Illinois State Board of Education, 1986). We then developed a pool of approximately 100 short, objective, multiple-choice statements to assess this domain. Items were written by a team that included principals, educational psychologists, and specialists in test construction. After reviewing the items for such factors as content appropriateness and readability a total of 76 items were retained for the empirical phase of test development. The general prompt "How often do you..." preceded such items as "make detailed staff improvement plans," "make regular contact with teachers to evaluate student progress," and "nominate a teacher for awards." Five response choices were presented for each item, indicating how frequently each item was performed: "Almost Never," "Seldom," "Sometimes," "Frequently," and "Almost Always."

At the same time, a pool of items was developed to assess contextual factors. Sample items appearing under the prompt "Your school..." included "has high student mobility," "consistently outperforms other schools in the area," "has a truancy/dropout problem." Parallel kinds of items were developed for the prompts "Your staff is..." and "Your community..." These items were presented in a separate section of the booklet. A five-choice response format was used for these items also: "Strongly Disagree," "Disagree," "Uncertain," "Agree," "Strongly Agree."

A pilot form incorporating both the instructional leadership and contextual items was prepared and sent to a random sample of 600 public school principals in Illinois. The pilot form also obtained data regarding age, gender, ethnic

status, years of experience as a principal, teaching experience, highest earned degree, type of school, and school population. Additional questions asked about the amount of involvement in professional development activities and whether the individual had ever been presented with a special commendation or award for his or her work as an administrator. Pre-addressed, stamped envelopes were included to facilitate return of the completed surveys. No identification was requested in order to ensure anonymity.

Completed surveys were received from a total of 191 principals. In addition to this sample, the pilot form was used in a series of related validation studies involving individual schools and complete districts. This brought the total sample available for psychometric analysis of the pilot form to 242.

The pilot data were subjected to various kinds of statistical analyses, including factor and cluster analysis, in an attempt to identify structural elements within the total set of instructional leadership items and to eliminate items that did not show acceptable levels of reliability and discrimination.

These studies resulted in the retention of 48 items that measured five categories of instructional leadership: Defines Mission, Manages Curriculum, Supervises Teaching, Monitors Student Progress, and Promotes Instructional Climate. These empirically derived self-report dimensions correspond in many respects to facets of instructional leadership that observational studies found to be typical of effective leaders (Illinois State Board of Education, 1986; Kroeze, 1984; Murphy, 1988; Rogus, 1983). An additional 40 items were kept to measure the three contextual dimensions: Staff (14 items), School (15 items), and Community (11 items). The final instrument was titled the Instructional Leadership Inventory (ILI: Maehr & Ames, 1988).

From the perspective of the achievement model presented earlier, these five categories may be thought to represent important elements of the situation (S) facet. That is, they reflect ways in which the principal or instructional leader can act to impact student learning outcomes directly. For example, the principal who evaluates standardized test data carefully to identify current areas of weakness in the curriculum (Monitors Student Progress) is likely to have a significant and beneficial effect on subsequent student performance. Before proceeding to a summary of some of the evidence supporting the instrument's reliability and validity, let us briefly review the interpretation of these five dimensions.

Description of the ILI Scales

Defines Mission. Individuals who score high describe themselves as administrators who frequently discuss school goals, purposes, and mission with staff. They take advantage of any opportunity to stress and communicate school goals. Further, they try to make themselves visible in the school building, they recognize good teaching at formal school ceremonies, and they communicate excitement about future possibilities to staff and students.

Manages Curriculum. High-scorers describe themselves as administrators who provide the information teachers need to plan their work effectively. They work to ensure a good fit between curriculum objectives and achievement testing and provide specific support for curriculum development. Their primary emphasis as administrator is with educational rather than administrative issues. People who score high have a good knowledge of instructional methods that allow them to make valid and useful critiques of their staff's work.

Supervises Teaching. Individuals who score high describe themselves as spending time working on teaching skills with teachers, observing classes, and encouraging staff to try their best. They coach and counsel teachers in a supportive manner. They attempt to critique teachers as though they were a mentor rather than an evaluator. They encourage teachers to evaluate their own performance and set goals for their own growth.

Monitors Student Progress. People who score high on this scale describe themselves as stressing to teachers the importance of achieving top test scores. They review student performance data with teachers and use student assessment information to gauge progress toward the school's goals. Individuals who score high provide teachers with easy and timely access to student assessment information and they discuss item analyses with teachers to determine strengths and weaknesses with the instructional program.

Promotes Instructional Climate. Administrators who score high on this scale encourage teachers to try out new ideas and to compete for awards. They nominate staff members for awards, write letters of commendation for a job well done, and ask parents to praise teachers for their good work. Individuals who score high reinforce high expectations by establishing academic standards and incentives; they make achievement the top priority. These administrators establish clear guidelines concerning the school's policies and procedures and are consistent in enforcing them.

Staff. Individuals who score high view their staff as cohesive, professionally committed, motivated, and capable. Further, high-scoring administrators perceive their staff to be well respected both in the district and in the community at large. Their staff is cooperative, forceful, and persevering.

School. Individuals who score high perceive their school to have a clear sense of direction/mission. Their schools run smoothly, have adequate educational resources and facilities, and are clean, orderly, and safe. Their schools tend to outperform other schools in their area.

Community. Individuals who score high rate their communities as being highly involved in education. These communities are perceived as having high expectations for student achievement and they encourage educational innovation.

## Psychometric Properties of the Instructional Leadership Inventory

The following section provides a brief summary of the main psychometric characteristics of the Instructional Leadership Inventory. For a complete description, the reader is referred to Krug and Ahadi (1989).

Reliability. Coefficient alpha indexes of internal consistency for the eight scales range from a low of .74 for the Manages Instruction scale to .89 for the Staff scale with a median value of .81. These generally high values suggest that the Instructional Leadership Inventory is sufficiently reliable to justify its use on an individual basis.

Correlations among the scales average .42 and are all positive. This suggests the presence of one or more large second-order factors. It further suggests that although instructional leaders engage in a wide variety of seemingly distinctive behaviors, there are important consistencies underlying the behavior of effective instructional leaders.

Three kinds of evidence have been accumulated to support the validity of the ILI: correlations with other self-report measures, correlations with supervisory performance ratings, and correlations with relevant, external behavior measures.

Validity Evidence 1: Correlations With Other Self-Report Measures of Instructional Leadership. A critical aspect of the construct validity of any instrument is its ability to converge with alternative measures of the same underlying constructs. Therefore, instructional leadership was assessed by both the Instructional Leadership Inventory and the PIMRS. Correlations between the two instruments are substantial, indicating a high degree of convergence between the two

independently developed measures of instructional leadership. A regression of the ten PIMRS scales on each of the five Instructional Leadership Inventory scales was performed. Individual scale multiple Rs ranged from .34 to .90. From the multidimensional perspective of the redundancy coefficient (Stewart & Love, 1968), approximately 50% of the total (i.e., reliable and error) PIMRS variance is predictable from the five ILI scales. Although PIMRS scale reliabilities are unknown, if we estimate the average as .75, then another 25% of the total PIMRS variance is nonsystematic (i.e., unreliable) and therefore unpredictable. Further, when the Protects Instructional Time scale, which appears to have relatively little to do with the other PIMRS scales, is removed from the analysis, the total variance explained increases to 54%. In short, the two measures have substantial communality.

Validity Evidence 2: Correlations With Supervisory Performance Ratings. An even more important aspect of validity to examine is the extent to which ILI self reports correspond to external, independent assessments of instructional leadership behavior. For this purpose a study was designed in which 8 superintendents provided PIMRS ratings on 38 principals. Each principal completed the ILI. The use of separate instruments precluded the charge that significant correlations between the two sets of ratings might arise artifactually from common measurement scales. A number of correlations between the ILI scales and the superintendent item ratings were found to be statistically significant and are summarized in Table 1.

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Insert Table 1 about here

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Validity Evidence 3: Correlations With Relevant External Behavioral Measures. A third type of support for the validity of the Instructional Leadership Inventory was provided by results demonstrating that instructional leaders who have received awards for their work score significantly higher on all five of the ILI dimensions than instructional leaders who have not been similarly recognized. Means and t tests for this analysis are presented in Table 2. Although some have questioned the accuracy and value of self-reported instructional leadership behavior (Hallinger & Murphy, 1985), these data demonstrate that a carefully constructed self-report instrument can reliably and validly distinguish principals who have received recognition for their work from those who have not. In addition, the data show that the ILI is a valid measure of performance as assessed by both supervisor ratings and independent measures of similar constructs.

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Insert Table 2 about here
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Instructional Climate: Structure and Measurement

Following the development of a reliable and valid set of instructional leadership scales to assess the direct impact of principals on schools, we next addressed the question of indirect impact via the school climate. In this area we were guided principally by the work of Braskamp and Maehr (1983; 1985). Their research on a variety of organizations, has identified four pervasive dimensions that underlying the values and beliefs of organizations: Accomplishment, Recognition, Power, and Affiliation. In addition to representing organizational-level themes, similar dimensions can be identified and assessed in the personal values and motivations of individuals. Their organizational scales have some things in common with scales that measure work atmosphere (Payne & Pugh, 1976) but they do not assess structural elements, organizational practices, and group behavior. Instead, their primary focus is on the underlying values of the organization as perceived by those within the organization. In its original form the Braskamp and Maehr (1985) instrument, called SPECTRUM, is intended for use in a wide variety of organizational settings. Our adaptations resulted in the development of instruments specifically for the school setting.

First, we recognized that teachers and students were each likely to provide important perspectives on the school climate. Therefore, appropriate instruments would be needed for each group. We also recognized that the perceptions of teachers regarding school instructional leadership, in addition to climate, could simultaneously provide an important cross check on the self-reports of school instructional leaders. On this point Murphy (1988) has pointed to a paradox in the instructional leadership literature: although most principals rate instructional leadership activities as priorities, descriptions of how they spend their time demonstrate clearly that administrators actually spend only a very small percentage of their time with instructional leadership activities. By using teachers ratings of instructional leadership behavior, it is possible to obtain an independent, perhaps more balanced view of the instructional leadership of the school.

The result was two versions of what became known as the Instructional Climate Inventory: Form S for students (Braskamp & Maehr, 1988b), and the Instructional Climate Inventory: Form T for teachers (Maehr, Braskamp, & Ames, 1988). The

development, validation, and standardization of each of these two instruments is described in the sections that follow.

School Climate Inventory: Student Version

The Instructional Climate Inventory: Form S (ICI-S) is designed for use with students in grades 3 through 12 to measure their perceptions of school climate. ICI-S consists of 20 short, multiple-choice statements selected and adapted from SPECTRUM (Braskamp & Maehr, 1985) that require about 5-10 minutes for students to complete. Five options are provided from which students select their answers: "Strongly Agree," "Agree," "Uncertain," "Disagree," "Strongly Disagree." Norms have been developed for students in grades 3 through 12. The ICI-S yields six scores. Four represent those key factors that Braskamp and Maehr's research suggested influences organizational climate: Accomplishment, Recognition, Power, and Affiliation. Two others, Strength of Climate and Commitment, assess student perceptions of how well defined they perceive the school's values are and their degree of loyalty to the school. Table 3 provides a brief description of each scale and presents sample items.

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Insert Table 3 about here

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Development of the ICI-S. Maehr and Fyans (1988; Fyans & Maehr, 1987) administered an initial set of 17 climate items adapted from the Braskamp and Maehr instrument to a large sample of 16,000 third, sixth, eighth, and tenth grade students. In addition, motivational level of students was assessed and students' achievement was measured with a nationally normed achievement test. Results of this study validated these climate factors as antecedents of motivation and school achievement. (See Chapter X for additional details of this research.)

Additional work was undertaken to further refine the instrument. New items were added to assess the Strength of Climate and Commitment dimensions in particular because they were not well represented in the initial item pool. At the same time, the reading level of some items was reduced to make the instrument appropriate for a broader range of students. A revised instrument, containing 22 items, was subsequently administered to 3056 students. The sampling plan included an approximately equal number of students at each grade between third and twelfth.

The final assignment of items for each scale was guided by both empirical and rational criteria. A factor analysis of the item pool indicated the presence of multiple dimensions

corresponding approximately to theoretical predictions. However, it was immediately apparent from the intercorrelations among the items that a strong, general, higher-order factor was operating. This tended to maintain an unavoidably higher level of correlation among the resulting scales than might normally be desirable.

Reliability. In terms of reliability, there are two facets that need to be considered: student level and school level reliabilities. Student level reliability is represented in the kind of coefficients that are usually reported in test manuals. However, when the School Climate Inventory is used to assess an entire school, individual scores are aggregated into a group profile. The reliability of aggregated scores is not appropriately evaluated by student level coefficients although the two kinds of reliability are obviously related. For example, a score that is completely unreliable at the student level cannot be aggregated to form a highly reliable composite. However, different factors come into play at the school level that require additional investigation.

At the individual level, the internal consistency of the scales was found to be high. Within the sample of 3056 students previously described values for each scale were as follows: Accomplishment (.82), Recognition (.66), Power (.71), Affiliation (.77), Commitment (.82). No calculation of internal consistency was possible for Strength of Climate which is assessed with a single item in the student form. Overall, these values are excellent, especially considering the brevity of the scales.

The second level of reliability to examine was at the school or aggregate level. An analysis of the consistency of the ICI-S scores across students was made for all grade levels for which it was designed. Analyses of variance on each score across students and schools provided the basic quantities from which intraclass correlations (or generalizability) coefficients could be calculated. These results are summarized in Table 4. In the case of student level reliabilities it is appropriate to report a single reliability index for each scale because the test length is fixed for any individual. With school scores, however, reliability calculations must take into account the number of students aggregated. For this reason Table 4 shows reliability estimates for ICI-S mean scores based on 25, 50, 75, and 100 students.

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Insert Table 4 about here

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Validity. A critical aspect of the construct validity of an instrument like the ICI-S is its ability to assess

differences across schools reliably. That is, the fundamental utility of these scales for guiding a school climate development program rests on the ability of these scales to discriminate among schools with differing climates.

In order to test this critical hypothesis, two empirical studies were conducted, one at the elementary school level and one at the high school level. Five schools with approximately equal demographic characteristics (i.e., size, geographical location, etc.) were included in the elementary school study. Three schools were included in the high school study. The latter were somewhat more variable than the elementary school samples, particularly in terms of size. A series of analyses of variance (ANOVAs) were carried out, one for each of the ICI-S scales, to test the impact of school (independent variable) on climate (dependent variable). Preliminary analyses of the ICI-S had revealed the presence of grade effects sufficiently large to warrant the use of grade level norms in the operational scoring of the instrument. Consequently, grade was treated as a separate factor in the ANOVAs so that grade differences would not be confounded with school effects.

The results of these analyses were generally consistent with expectation. For the elementary school study, five of the seven tests for differences across schools were significant beyond conventional confidence levels. For the high school study, all of the seven tests for differences across schools were statistically significant.

Instructional Climate Inventory: Teacher Version

The Instructional Climate Inventory: Form T, (ICI-T) is designed to assess instructional leadership behavior and school climate as well as teacher satisfaction and commitment. This instrument uses the same set of items and assesses the five dimensions of instructional leadership included in the Instructional Leadership Inventory. In addition, the ICI-T contains scales adapted from a previously validated and extensively researched instrument (Braskamp & Maehr, 1985) for measuring climate factors. Table 5 presents a brief description and sample of the items used to assess each of these dimensions.

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Insert Table 5 about here

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The current version of the ICI-T consists of 108 brief, multiple-choice statements that require approximately 20-30 minutes to complete. Norms have been developed on the basis of data collected from 515 teachers. Approximately 33% of this

sample was drawn from elementary schools, 14% from junior high (or middle) schools, and 53% from high schools. Because of significant differences on several of the scales across school type, separate norms are provided for elementary, junior high, and high school.

Coefficient alphas for the twelve scales range from .69 for the Power scale to .91 for the Commitment scale with a median value of .85. These generally high values suggest that the Instructional Climate Inventory (Form T) is reliable even for use on an individual basis. Initial studies indicate that a significant proportion of the variation in ICI-T scale scores is attributable to differences between schools, ranging from 8% to 25% for individual scales, as would be expected of an instrument intended to assess inter-school rather than inter-individual differences.

Although the validation of the Instructional Climate Inventories is far from complete, the value of instruments that have parallel constructs may be seen in the results reported in Table 6. In this study individual profiles were first averaged across students and across teachers at 10 different schools. For descriptive purposes, these mean scores (i.e., the student and teacher profiles) were then correlated across the 10 schools.

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Insert Table 6 about here

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It is encouraging to note that correlations in the diagonal of the matrix, that is across corresponding scales, are all high and positive. This indicates that there is congruence between the two perspectives and a pervasive quality to the climate that transcends the role of teacher and student. However, there is no theoretical requirement that these be the highest in each row (or column). Indeed, it is the pattern of relationships among scales that is even more revealing. For example, the students' ratings of affiliation in the climate do correlate most highly with teacher affiliation ratings. However, teachers' perception of affiliation appear to be even more highly correlated with students' ratings of accomplishment, recognition, commitment, and strength of climate.

Although these data are preliminary and further research with larger, more diverse samples of schools is required, the conclusion to be drawn from results to date is that the Instructional Climate Inventories conform to theoretical expectations and identify reliable differences in various aspects of school climate. The usefulness of these instruments is likely to increase significantly as the results of studies

now in progress contribute to our knowledge of these instruments and the underlying constructs they measure.

## Understanding the Behavior of Effective School Leaders

Earlier, I noted Murphy's (1988) observation that one of the assessment problems currently facing the area of school leadership was that a great deal of the research ignored stylistic or personal factors that help define the set of behaviors effective administrators use. This is not really a problem if our purpose is only to analyze the impact of school leaders on student learning outcomes. Under these circumstances it is enough to know what they do (i.e., to identify and assess key dimensions of instructional leadership), not necessarily why they do it.

However, when we move from analyzing school leadership to developing school leadership, the "why" problem becomes acute. For that reason we brought a fourth instrument into our studies of school leadership, one that would assess factors that explain why leaders behave as they do: the School Administrator Assessment Survey (Braskamp & Maehr, 1988a).

### Background

The School Administrator Assessment Survey is a specialized adaptation of SPECTRUM (Braskamp & Maehr, 1985). It consists of a series of scales that simultaneously assess the person, their perceptions of job opportunities, and the culture or climate of the setting in which the person works. This multilevel assessment is helpful when identifying specific objectives for individual improvement and personal development.

Although instruments exist that measure individual values and goals, organizational culture or climate, job satisfaction, and related attitudes, SPECTRUM is unique in that it combines all these elements into a single tool. Furthermore, each element--the individual, the job, and the organization as a whole--is assessed in terms of the same four characteristics: Accomplishment, Recognition, Power, and Affiliation.

In the original version of SPECTRUM the focus is on organizational settings. For this adaptation items were modified to fit the special context of school administrators. In particular, items that referred to the work setting were changed to assess the administrator's perceptions of the culture of the district. The instrument consists of 200 items measuring a total of 19 scales. The development and validation of these scales is well documented in other sources (Braskamp & Maehr, 1983; 1985; Hensler & Krug, 1988; Hensler, Krug &

Maehr, 1989; Krug, 1987; Krug, Maehr & Braskamp, 1989; Maehr, 1984; Maehr & Braskamp, 1986; Stonehouse, 1987; Suddarth, 1987) to which the interested reader is referred. However, a brief description of the scales is necessary in order to understand the full range of factors tapped by this multidimensional instrument.

Description of the Scales

Two scales in the School Administrator Assessment Survey measure Job Satisfaction and Commitment, two primary indicators of how heavily the individual has invested in his or her role as a school leader.

Job satisfaction has been extensively studied and various facets of job satisfaction have been identified. Although Satisfaction is reported as a summary index, the items for this scale are systematically sampled across the four content areas measured by the personal, job opportunity, and organizational scales: Accomplishment, Recognition, Power, and Affiliation. As such the Satisfaction scale includes items that correspond to major facets of job satisfaction identified in the research literature: satisfaction with work itself, with pay, with promotion, with supervision, and with co-workers (Rhodes, 1983).

The Commitment scale measures acceptance of and loyalty to the district. This scale emphasizes identity with the district rather than an affective reaction to a job (Cook, Hepworth, Wall & Warr, 1981). It is similar to other scales that measure belief in and acceptance of the goals and values stressed by the organization (Porter, Crampton & Smith, 1976; Mowday, Steers & Porter, 1979).

Self-Concept Scales. Although there are a set of behaviors that effective administrators have in common, there is no one personality that is best suited to the job. People possess unique combinations of factors that determine what they find rewarding and it is these factors that determine the underlying motivations for behavior. Three aspects of the person's self-concept are measured by the School Administrator Assessment Survey and are briefly described here: Self-reliance, Self-esteem, and Goal-directedness.

Self-reliance measures the extent to which the individual perceives that he or she can chart new waters and confront challenges, difficulties, and uncertainties. High-scoring individuals perceive that they control their own destiny. They view themselves not as pawns, but rather as originators, initiators, or determiners of what will happen. High-scoring individuals tend to be achievement-motivated people; they are innovators and pathfinders.

Self-esteem measures the sense of confidence that an individual has in his or her ability to perform. This sense of confidence arises from how individuals make attributions for performance outcomes. High-scoring individuals tend to make internal attributions for positive outcomes and external attributions for negative outcomes. In other words, high-scoring individuals perceive that when good things happen, it is because of something that they did, but bad things happen because of factors outside of their control. Specifically, this attributional style leads these individuals to adopt a belief that they can be effective and that they can exert control over situations.

Goal-directedness refers very specifically to the self-ascribed tendency to set goals and organize one's behavior accordingly. High-scoring individuals have a sense that they are in the process of becoming something rather than just being something. Because of their goal-directed behavior, high-scoring individuals possess such critical components of achievement as the ability to delay gratification for short-term rewards in favor of more long-term goals and outcomes. They also tend to set performance goals consciously, create specific plans for the future, and to make schedules for themselves.

Personal Incentive Scales. The four personal incentive scales are best interpreted as the values people consider important and most worthwhile in their lives (Maehr, 1984). These scales were empirically developed by factor analysis but correspond in many ways to dimensions identified in other studies of basic human and work values (e.g., Ronen, 1978). A short description of each of the four scales follows.

Individuals who score high on the Accomplishment scale are very involved in what they do. They want their job to be very challenging, exciting, and fun. Generally they feel most comfortable and proud of themselves when they do things other people can't do or when they solve problems that seem to stump other people. They may often feel dissatisfied when their freedom to explore new solutions to problems is restricted. It's important to them that their job provide variety and stimulation. When it becomes routine, they can quickly become bored and disinterested. They generally identify with ''self-starters,'' people who like challenges and spend time thinking of new ways to improve themselves. They take pride in what they do and work hard to improve job skills. They may often find themselves working extra and putting in time when others don't, just to meet their own personal performance standards.

Individuals who score high on the Recognition scale work harder when they receive respect and external acknowledgment for their work. They are likely to do their best when they

have the encouragement and support of others. Financial reward is also valued strongly and seen as a very significant (if not the most significant) indicator of success and status. High-scoring people seek out jobs that provide significant financial benefit. They are apt to work hard for salary increases and other visible symbols of success. Earning a good salary is both satisfying to them personally and an indicator of their worth to others.

People who score high on the Power scale identify with ambitious, competitive people who work hard to get ahead. They like to be the one in charge and strive for status and leadership positions in which they can be in control of other people. They prefer competitive situations in which there are winners and non-winners. Popularity is less important to them than achievement. They often feel that the best way they can help others is to get them to do it their way. If they aren't able to channel their competitive needs into productive goals their ambition may alienate them from co-workers and friends.

People who score high on the Affiliation scale enjoy the company of friends and like to be around other people. Their job and life must provide them with opportunities to be with other people. They value this kind of stimulation. They don't work at their best alone. They generally trust people and are able to relate warmly to them. High-scoring people can frequently be counted on to sacrifice personal gain for others. They feel some commitment to social, civic, or religious concerns and may find themselves spending a significant portion of their free time involved in these kinds of activities.

Job Opportunity Scales. Four scales measure the individual's perception of the extent to which each personal incentive can be fulfilled by options or opportunities available in the person's present job. A fifth scale assesses the extent to which individuals feel that they have opportunities for advancement in their present position.

Since the job opportunity scales parallel the personal incentive scales, they have analogous interpretations. For example, people who score high on the Accomplishment scale view their jobs as very interesting, challenging, and meaningful. They describe their job as providing many opportunities to try new tasks, solve problems, work on new projects, and improve their skills and talents. They feel they have the time to pursue excellence in their work. Similar kinds of interpretations hold for the Recognition, Power, and Affiliation scales.

Advancement refers to the extent to which individuals feel that they are not stuck in their current jobs. This is

also associated with a belief that their current position is not a ''dead-end'' position, but rather an opportunity to develop skills and ability that will enable the individual to advance in the district hierarchy.

Climate Scales. The final set of scales measures an individual's perception of the district instructional climate, that is, the underlying values and beliefs of the school district. Those underlying values that are transmitted and revealed in a number of ways are measured by five scales: Accomplishment, Recognition, Power, Affiliation, and Strength of Climate.

Once again, the design of the instrument was to maintain congruence with scales used to assess Personal Incentives and Job Opportunities.

A separate scale measures the extent to which district values are perceived as being well-defined and effectively communicated. High scores suggest that the district has a very clear set of norms, values, and sense of direction.

Relationship to Instructional Leadership Behavior

The variables assessed by the School Administrator Assessment Survey were included in our studies for their potential value in explaining school leadership behavior. When the SAAS variables are used as predictors, an average of 25% of the total variance in dimensions assessed by the ILI is explained (after correction for sample bias). The SAAS variables most effectively predict the Monitor Student Progress dimension (34%) and least effectively predict the Supervise Teaching dimension (20%). Among the consistently most important predictors are the Climate Power scale, the Job Opportunities Affiliation scale, and the Personal Incentive Affiliation scale. Among the consistently least important predictors are the Climate scales that assess Accomplishment and Recognition.

A detailed account of how the SAAS variables explain instructional leadership would require a full explanation of the theory that underlies the SAAS and would take us far beyond the scope of this chapter. However, even this brief summary at key findings shows that the SAAS provides a theoretically useful set of constructs that explain a very significant portion of predictable variation in instructional leadership behavior.

From a practical point of view, experience with a large statewide program further suggests that they provide a useful framework for the design of instructional leadership development programs (Illinois State Board of Education,

1988). That is, they provide participants with insight into and clarification of attitudes, beliefs, and values that underly a particular style of leadership. In addition, they help individuals identify personal strengths on which they can build to become more effective leaders.

## Summary

This chapter began by asking two fundamental questions: (a) how does school leadership affect learning and (b) what do effective school leaders do. The answers to these questions have become the focus of a programmatic research effort that began in the study of human motivation and organizational effectiveness. Although many of the answers are still on the horizon, some important developments have already taken place. In particular, a set of psychometrically refined instruments have been produced that allow us to operationalize key constructs with which to build and test a realistic model of student learning.

In the process, we have begun to understand the structure of school leadership behavior better. We have identified important dimensions of school climate through which school leaders influence the motivation of both teachers and students. Although we still have much to learn, the availability of structurally sound, reliable and valid instruments will greatly facilitate that learning process.

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Figure 1

A Conceptual Model for Understanding Clasrroom Learning and Achievement

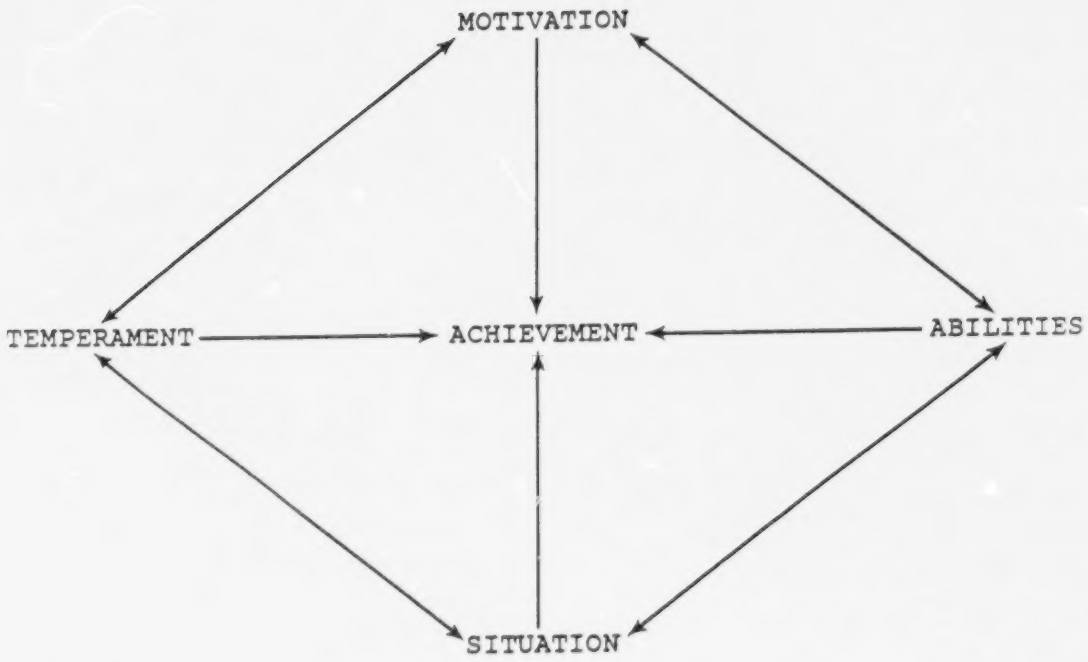

Table 1

Summary of Significant Correlations Between Superintendent PIMRS Ratings and ILI Scales

Define Mission

.33 Communicate the school's mission effectively to members of the school community
.31 Discuss the school's academic goals with teachers at faculty meetings
.38 Draw upon the results of school-wide testing when making curriculum decisions
.37 Assess the overlap between the school's curriculum objectives and the school's achievement tests
.37 Discuss the item analysis of tests with the faculty to identify curriculum strengths and weaknesses
.41 Use test results to assess progress toward school goals
-.34 Ensure that tardy and truant students suffer specific consequences for missing instructional time
.32 Recognize students who do superior academic work with formal rewards such as an honor roll or mention in the principal's newsletter
.30 Recognize superior students achievement or improvement by seeing students in the office with their work

Supervise Teaching

.35 Review student work products when evaluating classroom instruction
.33 Assess the overlap between the school's curriculum objectives and the school's achievement tests
.37 Tutor students or provide direct instruction to classes
.44 Recognize superior students achievement or improvement by seeing students in the office with their work
.31 Contact parents to communicate improved or exemplary student performance or contributions

Monitor Student Progress

.31 Recognize superior students achievement or improvement by seeing students in the office with their work

Promote Instructional Climate

.37 Recognize superior students achievement or improvement by seeing students in the office with their work

Table 2

t Tests for Differences Between Principals Who Have and Have Not Received Awards for Their Performance

| | Award Group | | No Award Group | | |
|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | t |
| Defines Mission | 31.0 | 4.6 | 28.3 | 4.4 | 4.41 |
| Manages Curriculum | 32.4 | 4.1 | 29.3 | 4.0 | 5.78 |
| Supervises Teaching | 36.8 | 5.4 | 34.3 | 4.9 | 3.60 |
| Monitors Student Progress | 36.6 | 5.9 | 33.6 | 5.2 | 4.10 |
| Promotes Instructional Climate | 42.3 | 6.0 | 39.2 | 5.7 | 4.02 |

Note: Based on data from 238 Illinois administrators. All t values are significant at or beyond the .001 level.

Table 3

Brief Description of (and sample items from) the ICI-S Scales

Commitment

High scores mean that students have a strong sense of pride and ownership in the school. (I have a strong sense of loyalty to this school.)

Strength of Climate

High scores mean that the school's goals and purposes are seen to be well defined and clear to all. (Every student in this school knows what it stands for.)

Accomplishment

High scores mean that the school is perceived by the students as emphasizing excellence and quality in what it does. (This school makes me like to learn.)

Recognition

High scores mean that the school climate is perceived as valuing and rewarding good efforts. (Doing well at school gets the approval of my teachers.)

Power

High scores mean that students rate the school's climate as one that places considerable emphasis on competition. (Competition among students in this school is very high.)

Affiliation

High scores mean that students consider the school climate to be one of trust and respect. (Teachers at this school treat students with respect.)

Table 4

School Level Reliabilities of the ICI-S Scales

| Scale | Number of Students 25 | 50 | 75 | 100 |
|---|---|---|---|---|
| Accomplishment | .80 | .88 | .92 | .93 |
| Recognition | .82 | .89 | .94 | .94 |
| Power | .71 | .79 | .83 | .85 |
| Affiliation | .86 | .92 | .95 | .96 |
| Commitment | .65 | .77 | .82 | .86 |
| Strength of Culture | .66 | .77 | .82 | .86 |
| Total | .79 | .87 | .91 | .93 |

Note: Based on data from 3056 students in grades 3 through 12.

Table 5

Brief Description of (and sample items from) the ICI-T Scales

Defines Mission

High scores characterize a school climate in which administrators regularly discuss school goals and purposes with staff. (Administrators in our school take advantage of an opportunity to stress and communicate school goals.)

Manages Curriculum

Schools with higher scores characterize a climate in which administrators work to provide specific support for curriculum development. (Administrators in our school make sure that lesson plans fit with the stated instructional objectives.)

Supervises Teaching

High scores characterize schools in which administrators spend time working on teaching skills with teachers, observing classes, and encouraging staff. (Administrators in our school model effective teaching techniques for staff.)

Monitors Student Progress

High scores characterize schools in which student progress is a top priority. (Administrators in our school work with teachers to discover new approaches for dealing with learning problems.)

Promotes Instructional Climate

High scores characterize schools that encourage teachers to try out new ideas and reinforce high expectations. (Administrators in our school foster regard for teachers among students and parents.)

Satisfaction

High scores characterize schools in which teachers are satisfied with work itself, with pay, with promotion, with supervision, and with co-workers. (I'm doing the kind of work I want.)

Commitment

High scores characterize schools in which teachers are proud to work and believe in strongly. (I identify with this school.)

### Strength of Climate

High scores characterize schools in which goals and purposes are seen to be well defined and clear to all. (Almost everyone has similar values and ideas about what this school should be doing.)

### Accomplishment

High scores characterize schools which are extremely supportive of teachers who try new ideas and are innovative in their problem solving. (This school stresses excellence. )

### Recognition

High scores characterize schools in which productivity by teachers is very visibly rewarded. (In this school we hear more about what people do right than the mistakes they make.)

### Power

High scores characterize schools that place considerable emphasis on competition. (Competition among teachers/departments is actively encouraged in this school.)

### Affiliation

High scores characterize schools in which a strong supportive feeling exists that is felt by most of the teachers. (There's a close knit feeling among us in this school.)

Table 6
Relationship Between Parallel Measures of Student and Teacher School Climate Perceptions

| | Student Measures | | | | | |
|---|---|---|---|---|---|---|
| Teacher Measures | 1 | 2 | 3 | 4 | 5 | 6 |
| 1. Accomplishment | .42 | .40 | .33 | .36 | .47 | .19 |
| 2. Recognition | .49 | .52 | .18 | .40 | .56 | .43 |
| 3. Power | -.23 | -.32 | .21 | -.16 | -.23 | -.51 |
| 4. Affiliation | .63 | .68 | .17 | .55 | .72 | .67 |
| 5. Commitment | .36 | .42 | .08 | .36 | .47 | .36 |
| 6. Strength of Climate | .43 | .46 | .10 | .28 | .44 | .46 |
| 7. Satisfaction | .26 | .29 | -.06 | .17 | .37 | .25 |

Note: Based on data from 171 teachers and 3056 students at 10 schools, including elementary, junior high, and senior high schools. There is no Satisfaction scale in the student version of the ICI.

# CENTER FOR RESEARCH AND DEVELOPMENT ON SCHOOL LEADERSHIP

## UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

### PROJECT DESCRIPTION: CLINICAL STRAND EVALUATION STUDY

#### GOAL

The primary objective of the Clinical Strand Evaluation Study is to determine the continuing, long-term effects of the program. This evaluation is intended primarily to be formative. That is, the aim is to collect data that will assist in the refinement of the basic model and allow implementation of the Illinois model on a broader, national basis.

During the 1988-89 year, the evaluation activities will consist primarily of: (1) interviews with Clinical Strand participants (program recipients) and Leadership Analysts (program deliverers) and (2) analysis of Leadership Analyst diaries. In subsequent years, retesting of program participants with leadership and school culture instruments will provide additional psychometric data for evaluation purposes.

#### SCHEDULE

The ISBE has assisted the Center in scheduling two dates and locations to meet with Analysts and participants:

May 2, 1989: Educational Service Center #4 (421 North County Farm Road, Wheaton)

May 4, 1989: State Board Building (100 North First Street, Springfield), Conference Room ? (2nd Floor)

#### PROCEDURE

Each morning (9:00-11:45), Center staff will meet with Leadership Analysts. Each afternoon (1:00-3:45) Center staff will meet with participants.

ESCs 1-10 are invited to nominate 2 Leadership Analysts and 2 Clinical Strand participants for the May 2 meeting. ESCs 11-18 are invited to nominate 2 Leadership Analysts and 2 Clinical Strand participants for the May 4 meeting.

Center Directors/Academy Coordinators are asked to send or phone their nominations (names, addresses, telephone numbers) to MetriTech (111 North Market Street, Champaign, 61820, 217-398-4868), which is handling meeting arrangements for the Center, by April 5. Information regarding the meetings will then be sent directly to nominees.

These meetings are envisioned as a series of focused group discussions addressing issues related to the design and implementation of the Clinical Strand from the perspective of both the program deliverer and program recipient.

## REIMBURSEMENT

Program funds are available to reimburse travel expenses of participants at standard mileage rates. Reimbursement will be made through MetriTech, Inc. directly to participants.